

VENTILATED GLASSES WITH A REMOVABLE PAD

BY

KYUNG HWAN MIN

5

CLAIMING FOREIGN PRIORITY

The applicant claims and requests a foreign priority,
through the Paris Convention for the Protection of
Industrial Property, based on a patent application filed in
the Republic of Korea (South Korea) with the filing date of
10 July 26, 2001, with the application number 2001-22673, by
the applicant. (See the Attached Declaration)

BACKGROUND

The present invention relates to sunglasses. More
15 particularly the present invention pertains to sunglasses
that are worn by riders of motorcycles, bicycles, and other
vehicles who experience strong winds blowing upon their
face.

Some of the presently available glasses have various
20 types of added protection around the perimeter edge of the
glasses that reduce the wind blowing upon the rider's face.

Unfortunately this extra protection on the glasses reduces
the amount of air circulation on the back interior surface
of the glasses near the face. The reduced air circulation
25 allows moisture to build up, which causes condensation and
fogging on the back interior surface of the glasses. The

"EXPRESS MAIL" Mailing Label Number E+59203 (59) US.

Date of Deposit: Nov 19, 2001.

- 1 I HEREBY CERTIFY THAT THIS PAPER OR FEE IS BEING DEPOSITED WITH THE
UNITED STATES POSTAL SERVICE "EXPRESS" MAIL POST OFFICE TO
ADDRESSEE SERVICE UNDER 37 CFR 1.10 ON THE DATE INDICATED ABOVE
AND IS ADDRESSED TO THE COMMISSIONER OF PATENTS AND TRADEMARKS,
BOX PATENT APPLICATION, WASHINGTON, DC 20231,
BY [Signature] Print Lu, K. Toric

condensation and fogging reduces the visibility of the rider. Bicycles and motorcycles can travel at relatively high speeds where adequate visibility is a great safety concern.

5 Devices, such as ski goggles, are designed to reduce wind effects upon the eyes and minimize the condensation buildup. Ski goggles are often made with an inner lens and an exterior lens that create a substantially enclosed chamber. The air in the chamber is warmed by the proximity
10 to the face. The higher air temperature of the chamber in relation to the outside ambient temperature assists in reducing condensation buildup. Unfortunately, ski goggles tend to be too bulky for riders of cycles. Furthermore, the ski goggles are not an aesthetically appealing design shape
15 for bicycle and motorcycle riders.

 Therefore there is a need for sunglasses that have added protection around the edges of the glasses, which reduce the wind blowing upon the rider's face. Furthermore, the glasses should also have a source for reducing the
20 condensation and fogging on the back interior surface of the glasses. The glasses should be lightweight and comfortable for the rider, while creating an appealing aesthetic image.

SUMMARY

25 An objective of the present invention is reducing the airflow impacting the rider's eyes. Motorcycles, bicycles, and other vehicles can travel at high speed, which creates

09992361-111901

significant airflow around the glasses into the eyes. The strong airflow around the perimeter of the glasses can cause significant watering of the eyes, which reduces visibility and affects safety. An advantage of the liner pad is

5 improved vision and comfort for the rider, due to the reduction in airflow impacting the eyes.

Another objective is providing adequate airflow through the glasses to counteract the build up of condensation upon the interior surface of the eyeglass frame. The reduction

10 of wind from around the perimeter of the glasses that contacts the interior surface must be compensated in some manner, in order to reduce condensation accumulation. Traveling on motorcycles and bicycles can be a strenuous activity. Perspiration often accumulates on the rider's

15 face, which vaporizes and collects on the glasses as condensation. Apertures are provided that allow a reduced airflow onto the interior surface. An advantage of the apertures is the reduction in condensation build up, which improves visibility and safety.

20 A further objective is easy attachment and removal of the protective liner pad from the eyeglass frame. Easily switching from just basic glasses to a ventilated glasses system with the pad is an important advantage. Removal of the inner frame and liner pad decreases the weight of the

25 glasses, which increase comfort. Also, some people consider the glasses more aesthetically appealing with the inner frame and pad removed. Detents are provided thus the inner

frame with the protective pad is quickly reattached to the eyeglass frame when travel begins on the cycle. The detents are advantageous as they save time and frustration, while providing a quick method of attaching and detaching the
5 inner frame from the eyeglass frame.

The ventilated glasses system includes a pad that serves as a liner for the inner frame. The pad reduces the air flowing into the eyes from around the perimeter edge of the glasses. A cavity with a partial air seal is formed by
10 the person's face and the ventilated glasses system with pad. The partial air seal prevents any significant amount of airflow around the perimeter edges of the eyeglass frame. This lack of airflow could cause an accumulation of moisture and condensation within the cavity. Without adequate
15 ventilation the condensation accumulates on the interior surface of the left lens and right lens, which obscures vision.

Apertures that form small holes are added to the eyeglass frame system to increase the airflow, thus reducing
20 the condensation. The apertures are small enough to minimize the strength and speed of the airflow, yet still sufficient in size to allow a volume of air to flow through that will remove condensation from the interior surface.

An embodiment of the ventilated glasses system with a
25 removable pad and detent includes an eyeglass frame with an exterior surface and an interior surface. The eyeglass frame has a left ear extension, a right ear extension, and a

09992361-111901
TOP SECRET

nostril bridge support. The first aperture and the second aperture are located on the nostril bridge support, where condensation tends to be the most prevalent. Air can flow from the exterior surface to the interior surface through
5 the first aperture and the second aperture.

The left lens and the right lens are attached to the eyeglass frame. The left lens and the right lens form a portion of the interior surface. Air flowing through the first aperture and the second aperture removes condensation
10 from the interior surface, which dries the left lens and the right lens.

An inner frame is attached to the eyeglass frame with a detent. The detent includes a male portion and a female portion that accepts the male portion. The detent firmly
15 secures the inner frame to the eyeglass frame. The inner frame has a pad that significantly reduces the wind from blowing on a person's eyes, while wearing the glasses. The pad is positioned on the back surface of the inner frame, so that the pad can compress against the person's face. The pad
20 has a thickness 't' that is about one-quarter (.25) inch.

The inner frame contains a first track and a second track. The eyeglass frame has an associated first ridge and second ridge. The first track guides the first ridge and the second track guides the second ridge. The inner frame
25 is guided into the proper alignment for attachment to the eyeglass frame.

0992361-11901

The eyeglass frame has a third aperture and a fourth aperture, which are similar in function to the first aperture and the second aperture. Air can flow through the third aperture and the fourth aperture thus removing
5 condensation from the interior surface. The third aperture is located adjacent to the right ear extension and the fourth aperture is located adjacent to the left ear extension.

Although the present invention is briefly summarized, a
10 fuller understanding of the invention can be obtained from the following drawings, detailed description and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

15 These and other features, aspects and advantages of the present invention will become better understood with reference to the accompanying drawings, wherein:

Fig. 1 is an exploded perspective view of the eyeglass
20 frame and inner frame.

Fig. 2 is a partial side view of the first track and first ridge.

25 Fig. 3 is a cutaway perspective view of the area around the nostril bridge support.

Fig. 4 is front view of the inner frame.

Fig. 5 is a back-side perspective view.

5 Fig. 6 is a bottom view with the inner frame attached to the eyeglass frame.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to figs. 1 through 6, with particular

10 reference to figs. 1 and 6, a ventilated glasses system 10 with a removable pad 12 and detent 14 includes an eyeglass frame 16 with an exterior surface 18 and an interior surface 20. The eyeglass frame 16 has a left ear extension 22, a right ear extension 24, and a nostril bridge support 26.

15 The first aperture 28 and the second aperture 30 are located on the nostril bridge support 26, where condensation tends to be the most prevalent. Air can flow from the exterior surface 18 to the interior surface 20 through the first aperture 28 and the second aperture 30.

20 The left lens 32 and the right lens 34 are attached to the eyeglass frame 16. The left lens 32 and the right lens 34 forms a portion of the interior surface 20. Air flowing through the first aperture 28 and the second aperture 30 removes condensation from the interior surface 20, which
25 dries the left lens 32 and the right lens 34.

0992361-11901
FOOTNOTES

An inner frame 36 is attached to the eyeglass frame 16 with a detent 14. Two detents 14, 14' are provided for a firm attachment, shown in dotted lines on fig. 6. The detents 14, 14' provide a quick and effective mechanism for attaching and removing the inner frame 36 from the eyeglass frame 16.

Referring to figs. 4 and 5, the detents 14, 14' include a male portion 38, 38' and a female portion 40, 40' that accepts the male portion 38, 38'. The female portion 40, 40' is an indentation located on the nostril bridge support 26. The male portion 38, 38' is a projection situated on the inner frame 36. The detents 14, 14' securely attach the inner frame 36 to the eyeglass frame 16.

Although not shown, the detents 14, 14' can also be Velcro™. Velcro™ has two opposing side, which adhere to each other.

The nostril bridge support 26 is divided into a left side 42 and a right side 44. One detent 14 is located on and to the left side 42 of the nostril bridge support 26. Another detent 14' is located on and to the right side 44 of the nostril bridge support 26. The female portion 40, 40' is located on the nostril bridge support 26. The male portion 38, 38' is positioned on the inner frame 36. The detent 14 is located adjacent to the first aperture 28,

while the detent **14'** is located adjacent to the second aperture **30**.

Referring to figs. 3, 4 and 6, the inner frame **36** has a pad **12** that significantly reduces the wind from blowing on a person's eyes, while wearing the glasses. The pad **12** is positioned on the back surface **46** of the inner frame **36**, so that the pad **12** can compress against the person's face. The pad **12** is foam or other soft pliable materials that are gentle and comfortable on the person's skin. The soft pliability of the foam allows the foam to conform to the shape of the person's face.

As shown in fig 6, the pad **12** has a thickness 't' that is between about one-sixteenth (1/16) inch and about one-half (1/2) inch. In a preferred embodiment the pad **12** has a thickness 't' that is about one-quarter (.25) inch. The first aperture **28** and the second aperture **30** function best when combined with the pad **12**. The pad **12** minimizes the airflow impacting the eyes from around the perimeter **48** of the ventilated glasses system **10**. The first aperture **28** and the second aperture **30** allow some reduced speed airflow to circulate upon the interior surface **20**. The reduced airflow is much gentler on the eyes, while still minimizing or eliminating accumulation of condensation.

Referring to fig. 1, 2, 4 and 5 the inner frame **36** contains a first track **50** and a second track **52**. The

eyeglass frame **16** has a corresponding first ridge **54** and second ridge **56**. Fig. 2 is a close up view of the first track **50** and the first ridge **54**. The first track **50** accepts the first ridge **54** and the second track **52** accepts the second ridge **56**. The inner frame **36** is thus guided into the proper positional alignment during attachment to the eyeglass frame **16**. In conjunction with the detents **14**, **14'** a secure connection is provided between the inner frame **36** and the eyeglass frame **16**. The first ridge **54** and the second ridge **56** are on the interior surface **20**. The first ridge **54** is shown in dotted lines, since it is obscured in the backside perspective view of fig. 5.

Referencing particularly figs. 2 and 4, the first track **50** has a first indent **66** that accepts a hinge protrusion **70**. The hinge protrusion **70** is attached to the first ridge **54**. Similarly, the second track **52** has a second indent **68** that accepts a hinge protrusion **70**. A screw **72** projects through the center of the hinge protrusion **70**.

Referring to figs. 1, 5 and 6, the eyeglass frame **16** is provided with a third aperture **58** and a fourth aperture **60** that are similar in function to the first aperture **28** and the second aperture **30**. Air can flow through the third aperture **58** and the fourth aperture **60** thus removing condensation from the interior surface **20**. The third aperture **58** is located adjacent to the left ear extension **22**

and the fourth aperture **60** is located adjacent to the right ear extension **24**.

0992361-111901

The eyeglass frame **16** also includes a fifth aperture **62** and a sixth aperture **64** that provide additional airflow from the exterior surface **18** to the interior surface **20**. The apertures are small in size to reduce the strength and speed of the airflow. Providing several apertures maintains sufficient airflow at a reduced speed to still remove condensation from the interior surface **20**. The condensation does not accumulate on the interior surface **20** thus visibility is preserved. The nostril bridge support **26** is divided into the left side **42** and the right side **44**. The first aperture **28** and fifth aperture **62** are positioned on the left side **42** of the nostril bridge support **26**. The second aperture **30** and sixth aperture **64** are positioned on the right side **44**. The first aperture **28** and fifth aperture remove condensation primarily from the left lens **32**, while second aperture **30** and sixth aperture **64** remove condensation primarily from the right lens **34**.

The left lens **32** and the right lens **34** are tinted for protection from the sun for the eyes. Although not shown, the ventilated glasses system can be provided with replacement lens. The left lens **32** or right lens **34** can be removed from the eyeglass frame **16**, then a replacement lens **32, 34** can be snapped into place.

0992361-11501

The ventilated glasses system 10 has several advantages. The strong airflow around the perimeter 48 of the ventilated glasses system 10 is significantly reduced by the pad 12. Irritation to the eyes is mitigated thus

5 improving visibility and enhancing safety. Sufficient airflow is created by the addition of the apertures 28, 30 to reduce condensation upon the interior surface 20 of the eyeglass frame 16. The detents 14, 14' facilitate easy attachment and removal of the protective liner pad 12 from

10 the eyeglass frame 16. Removal of the inner frame 36 and liner pad 12 when they are not desired, substantially decreases the weight of the glasses, thus increasing comfort for the person. The first track 50 is guided by the first ridge 54 so that the inner frame 36 is guided into the

15 correct positional alignment with the eyeglass frame 16.

See BI Although the present invention has been described in considerable detail with regard to the preferred versions thereof, other versions are possible. Therefore, the appended claims should not be limited to the descriptions of

20 the preferred versions contained herein.